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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,405	04/21/2004	Kenneth L. Inman	2174-102	5964
81905	7590	05/17/2010		
Hanley, Flight & Zimmerman, LLC 150 S. Wacker Dr. Suite 2100 Chicago, IL 60606			EXAMINER BOYCE, ANDRE D	
			ART UNIT 3623	PAPER NUMBER
			NOTIFICATION DATE 05/17/2010	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/829,405	Applicant(s) INMAN ET AL.	
	Examiner Andre Boyce	Art Unit 3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 February 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-13,15-21,23-29,31-37 and 39-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-13,15-21,23-29,31-37 and 39-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Final office action is in response to Applicant's amendment filed 02/04/2010. Claims 1, 5, 9, 13, 17, 21, 25, 29 and 40 have been amended. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are pending.
2. The previously pending rejections to claims 5, 13, 21 and 29 under 35 USC 112, second paragraph, have been withdrawn.
3. Applicant's arguments filed 02/04/2010 have been fully considered but they are not persuasive.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 40-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 40 is rejected as being vague and indefinite for use of the phrase "relative similarity to the base level variable." It is unclear what "relative similarity" includes or does not include. Clarification is required. Claims 41 and 42 are rejected as dependent claims.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 37, 39 and 40-42 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In order for a method to be considered a "process" under §101, a claimed process must either: (1) be tied to a particular machine or apparatus, or (2) transform a particular article to a different state or thing. *In re Bilski*, 545 F.3d 943, 88 USPQ2d 1385 (Fed. Cir. 2008). If neither of these requirements is met by the claim, the method is not a patent eligible process under §101 and is non-statutory subject matter.

With respect to independent claims 37 and 40, the claim language recites a computer implemented method, including receiving, in a computer system, a base level data set, defining a first segmentation tree; receiving, in the computer system, an alternate (level) data set, etc., however receiving data into a computer system is considered a nominal tie and insignificant extra solution activity that does not satisfy the requirement, since there is no indication that anything is done with the received data.

Claims 39, 41, and 42 are rejected based upon the same rationale, wherein the claim language does not include the required tie or transformation.

Claim Rejections - 35 USC § 103

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
9. Claims 1-5, 7-13, 15-21, 23-29, 31-37 and 39-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller et al (US 2002/0184077), in view of Christiansen et al (USPN 6,202,053).

As per claim 1, Miller et al disclose a method for segmenting a population (i.e., segmentation system for classifying households into market segments, ¶ 0017), comprising: defining a base level population segmentation tree associated with a base level data set having a base precision with a base segmentation tree defining module (i.e., population at node 1, figure 3 and partitioning module 510, figure 5, ¶ 0021, including nodes 2-13 of figure 3 based upon decisions 1-6); defining a set of alternative level variables with an alternative level variable defining module (i.e., partitioning module 510, figure 5), the set of alternative level variables associated with an alternative level data set and useable as substitutes in the nodes of the population segmentation tree to create a substitute level tree (i.e., populations split according to a plurality of decisions, ¶ 0021, including nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement); determining, with a substitute split value determining module (i.e., partitioning module 510, figure 5), substitute split values for each node of the substitute level tree to enable up and down shifting (i.e., splits based upon a different decision, ¶ 0022), the substitute split value determining module to calculate the substitute split values that maintain a

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percentage split value of the substitute level tree that is equal to a percentage split value of the base level population segmentation tree (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting the substitute level tree having the substitute split values to a user (i.e., split views area of display, including all splits made as \leq value versus $>$ value, ¶ 0057).

Miller does not explicitly disclose a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision. Christiansen et al disclose a breakdown of defined sub-populations (i.e., substitute precision different from the base precision, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., up and down shifting between levels of the base precision and the substitute precision, column 4, lines 17-24). It would have been obvious to one having ordinary skill in the art to include a substitute level tree having a substitute precision different from the base precision, and up and down shifting between levels of the base precision and the substitute precision in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claims 2-4, Miller et al does not explicitly disclose determining whether a level shift is required, determining segments using the base level tree when no level shift is required, and determining segments using another level when a level shift is required. Christiansen et al disclose in order to test the validity of the defined sub-populations, a representative sample of past applicants were re-scored with the new methodology and compared with their actual credit history (column 4, lines 25-28), wherein based upon on a specific attribute a group was further segmented (column 4, lines 62-67). In addition, a scorecard for sub-populations is developed taking into account the likelihood an account would ever be 90 days or more past due, wherein the scorecards are developed using the criteria validated with the sample population, wherein the sample population is analyzed using the newly created scorecards (column 5, lines 25-45). It would have been obvious to one having ordinary skill in the art to include segmentation validity testing and level shifting in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 5, Miller et al disclose determining at least one segment using the substitute level tree (i.e., terminal nodes 4, 5, 8, 10-13, figure 4).

As per claim 7, Miller et al disclose the split values are for income and age (¶ 0005).

As per claim 8, Miller et al disclose verifying the results of a segment determination when using substitute values (i.e., optimization of the segmentation, ¶ 0046).

As per claim 33, Miller et al disclose wherein the base level population segmentation tree is based on at least one of demographic data or behavioral data for a set of consumers (i.e., generating a plurality of classification trees based on demographic and behavioral data, ¶ 0018);

Claims 9-13, 15-16 and 34 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the system claims corresponding to the method claims.

Claims 17-21, 23-24 and 35 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software system claims corresponding to the method claims.

Claims 25-29, 31-32 and 36 are rejected based upon the same rationale as the rejection of claims 1-5, 7-8 and 33, respectively, since they are the software product claims corresponding to the method claims.

As per claim 37, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017) comprising: receiving, in a computer system, a base level data set having a first precision (i.e., data set of figure 3 including a population at node 1 split based on decision 1 into nodes 2 and 3); defining a first segmentation tree in accordance with the base level data set, the first segmentation tree comprising a plurality of base

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level variables, each variable associated with a base level node and having a corresponding base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); receiving, in the computer system, an alternate data set (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); defining a plurality of alternate level variables, each alternate level variable associated with an alternate level node and having a corresponding alternate level value (i.e., nodes 2-13 of figure 4 based upon decisions 1-6, but implemented in a different arrangement), and defining a second segmentation tree in accordance with the alternate data set (figure 4).

Miller does not explicitly disclose receiving, in the computer system, an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population. Christiansen et al disclose a breakdown of defined sub-populations (i.e., an alternate data set having a second precision different from the first precision of the base level data set, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables, column 4, lines 17-24). It would have been obvious to one having

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ordinary skill in the art to include an alternate data set having a second precision different from the first precision of the base level data set, a corresponding alternate level value to facilitate at least one of upshifting or downshifting relative to the base level data set, and the second segmentation tree comprising the plurality of alternate level variables and corresponding alternate level values representative of the population in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 39, Miller et al disclose calculating the corresponding alternate level value to maintain a similar percentage split between the base level node and the alternate level node (i.e., nodes 2 and 3 represent an equal percentage split using the same population node 1, figures 4 and 5).

As per claim 40, Miller et al disclose a method to segment a population (i.e., segmentation system for classifying households into market segments, ¶ 0017) comprising: receiving, in a computer system, a base level data set having a first precision; defining a segmentation tree in accordance with the base level data set (i.e., data set of figure 3 including a population at node 1 split based on decision 1 into nodes 2 and 3), the segmentation tree having a plurality of decision nodes, each comprising a base level variable and a base level value (i.e., nodes 2-13 of figure 3 based upon decisions 1-6); calculating a percentage split for each of the plurality of

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decision nodes of the segmentation tree, wherein the percentage split is calculated at the corresponding base level value for the corresponding base level variable (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5); receiving, in the computer system, an alternate level data set; selecting an alternate level variable from the alternate level data set for each of the plurality of decision nodes of the segmentation tree (i.e., data set of figure 4 including a population at node 1 split based on decision 5 into nodes 2 and 3); and calculating an alternate level value of the alternate level variable for each of the plurality of decision nodes, where the alternate level value is calculated to maintain the percentage split for each of the plurality of corresponding decision nodes (i.e., nodes 2 and 3 represent a equal percentage split using the same population node 1, figures 4 and 5), and outputting an alternate level segmentation tree to a user, the alternate level segmentation tree representative of the population associated with the alternate level data set (i.e., split views area of display, including all splits made as \leq value versus $>$ value, ¶ 0057).

Miller does not explicitly disclose receiving, in the computer system, an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable. Christiansen et al disclose a breakdown of defined sub-populations (i.e., an alternate data set having a second precision different from the first precision of the base level data set, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., the alternate level variable

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selected in association with a relative similarity to the base level variable, column 4, lines 17-24). It would have been obvious to one having ordinary skill in the art to include an alternate level data set having a second precision, and the alternate level variable selected in association with a relative similarity to the base level variable in Miller et al, as seen in Christiansen et al, since the claimed invention is merely a combination of old elements, and in the combination each element merely would have performed the same function as it did separately, and one of ordinary skill in the art would have recognized that the results of the combination were predictable.

As per claim 41, Miller et al disclose upshifting from the base level data set to the alternate level data set when the alternate level data set is more precise than the base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

As per claim 42, Miller et al disclose downshifting from the base level data set to the alternate level data set when the alternate level data set is less precise than the base level data set (i.e., switch from the data set of figure 3 to the data set of figure 4, based upon the optimization of a measure of behavior and the demographic data, ¶ 0024).

Response to Arguments

10. In the Remarks, Applicant asserts claim 40 has been amended to remove the language "relative similarity to the base level variable," however the claim still contains the language and the rejection under 35 USC §112 remains.

With respect to the 35 USC §101 rejection, Applicant argues the most recent examination guidelines issued by the USPTO provide an example claim that is similar in nature to the Applicants claims, in which a method is statutory when one step is tied to a microprocessor. See "Interim Examination Instructions for Evaluating Subject Matter Eligibility Under 35 U.S. C. §101," hereinafter "Interim Instructions," page 15, August 2009, wherein much like the example claim provided by the Interim Instructions, independent claims 37 and 40 also recite, in part, a computer system, which is analogous to the microprocessor recited in claim 5 of the Interim Instructions and found to be eligible subject matter. Further, under the broadest reasonable interpretation (BRI) of claim 5, the microprocessor is not referred to as insignificant extra solution activity. The Examiner respectfully submits that the Interim Instructions state, on page 5, that "[a]dditionally, the particular machine tie or particular transformation must meet two corollaries to pass the test for subject matter eligibility. First the use of the particular machine or transformation of the particular article must impose a meaningful limit on the claim's scope. So, a machine tie in only a field-of-use limitation would not be sufficient. Second, the use of the particular machine or the transformation of the particular article must involve more than insignificant 'extra-solution' activity. If the machine or transformation is only

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present in a field-of-use limitation or in a step that is only insignificant 'extra-solution' activity, the claim fails the M-or-T test, despite the presence of a machine or a transformation in the claim" (emphasis added). As such, receiving data in a computer system is deemed insignificant extra-solution activity that does not satisfy the requirement.

With respect to independent claims 1, 9, 17, 25, 37 and 40 Applicant argues neither of Miller nor Christiansen teaches or suggests a base level segmentation tree associated with a base level data set having a base precision, an alternative level data set to create a substitute level tree having a substitute precision different from the base precision, and the substitute level tree to enable up and down shifting between levels of the base precision and the substitute precision, wherein, while merely propagating from one segment to another segment does illustrate subsequent segments within the tree of different precision, such segment tree propagation is not indicative of a precision level of the whole segmentation tree, much less a base level segmentation tree associated with a base level data set having a base precision. In other words, Christiansen is silent to a degree of precision for the whole segmentation tree itself, much less distinguishing between more than one segmentation tree based on the precision of each segmentation tree.

The Examiner respectfully disagrees. Christiansen et al disclose a breakdown of defined sub-populations (i.e., substitute precision different from the base precision, figure 4), a scorecard developed for each sub-population to accurately score similarly situated applicants in each of the defined sub-populations (i.e., up and

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down shifting between levels of the base precision and the substitute precision, column 4, lines 17-24), wherein the sample population is 100 percent of a representative sample population (column 4, lines 26-37), not the entire population, as Applicant contends. As such, these representative sample and sub-populations indeed represent an alternative level data set to create a substitute level tree having a substitute precision different from the base precision

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andre Boyce whose telephone number is (571)272-6726. The examiner can normally be reached on 9:30-6pm M-F.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on (571) 272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andre Boyce/
Primary Examiner, Art Unit 3623
May 4, 2010